UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

THIS REPORT MAY CONTAIN CONFIDENTIAL BUSINESS INFORMATION (CBI)

In Reply Refer to: 3AP20

MAY 0 2 2018

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Coleen Davis
Environmental Manager
United States Steel Corporation – Edgar Thomson Plant
13th Street and Braddock Avenue
Braddock, Pennsylvania 15104

Dear Ms. Davis:

Enclosed is the Air Compliance Inspection Report for EPA's March 28, 2018 inspection of USS Edgar Thomson's facility located in Braddock, Pennsylvania. Additionally, please visit the small business resources information sheet for assistance and information at https://www.epa.gov/compliance/small-business-resources-information-sheet.

If you have any questions or comments, please contact James Hagedorn of the Air Protection Division at 215-814-2161 and hagedorn.james@epa.gov.

Sincerely,

for Zelma Maldonado, Associate Director
Office of Air Enforcement & Compliance Assistance

Enclosure

cc: Bill Rausch
Enforcement Engineer, ACHD, Air Quality Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

THIS REPORT MAY CONTAIN CONFIDENTIAL BUSINESS INFORMATION (CBI)

Inspection Date(s):	3/28/2018
Regulatory Program(s):	40 CFR Part 63 Subpart FFFFF – Integrated Iron and Steel Manufacturing Facilities 40 CFR Part 52 Subpart NN – Pennsylvania State Implementation Plan
Company name:	United States Steel Corporation
Facility Name:	Mon Valley Works, Edgar Thomson Plant
Facility Physical Location:	13th Street and Braddock Avenue Braddock, PA 15104
Mailing Address:	Same as Physical location
County/Parish:	Allegheny County
Facility Contact:	Coleen Davis, Environmental Manager cdavis@uss.com, 412-273-4730
AFS Number:	42-003-00202
Permit Number:	0051
NAICS:	331111 for Iron and Steel Mills

Attendees:

Facility Representatives:

John Michaud, Plant Manager, 412-273-7010
Mike Dzurinko, USS Environmental Affairs, 412-233-1467
Coleen Davis, USS Environmental Affairs, 412-273-4730
Chris Hardin, USS Environmental Affairs, 412-735-8097
Alaina Lantz, USS Environmental Affairs, 412-433-5915

EPA Inspectors:

James Hagedorn, Air Enforcement and Compliance Assistance Branch, 215-814-2161
James Riggs, Air Enforcement and Compliance Assistance Branch, 215-814-2238

State Inspector(s):

Bill Rausch, Allegheny County Health Department Air Quality Division, 412-578-7968

EPA Lead Inspector Signature/Date	Jim Hagedorn 5-2-18 **James Hagedorn**	**Date**
EPA Inspector Signature/Date	5/2/2018 **James Riggs**	**Date**
Supervisor Signature/Date	for 5/2/18 **Zelma Maldonado**	**Date**

I. Introduction

The Environmental Protection Agency (EPA) targeted USS' Edgar Thomson Plant, located in Braddock, PA (the "facility" or "ET"), for a compliance evaluation of the Clean Air Act (CAA) and with permitting requirements and applicable State and Federal regulations. On March 19th, 2018, the EPA notified Dean DeLuca of the Allegheny County Health Department (ACHD) by phone and email of the CAA inspection to be conducted on March 28, 2018. The Facility was notified of the inspection via phone on March 19th, 2018.

A. Summary of the Facility-

USS Edgar Thomson is an integrated iron and steel facility that produces steel slabs from raw iron. The facility began operation at the Braddock, PA site in 1875 and has been owned by United States Steel for most of its history. ET operates under the North American Industry Classification system (NAISC) code 331111 for Iron and Steel Mills. ET's primary customer is US Steel Irvin Works. Even though it is located along the Monongahela River, ET does not typically use the river to receive material or ship produce. Instead, raw material and products are transported by rail to and from the facility. ET produces steel slabs 24/7 averaging 8000-8500 steel tons of eight-inch-thick steel slabs per day. Length and width varies based on customer requirements. ET produces up to 60 different grades of steel based on carbon content and alloys. The facility operates under the Title V operating permit No. 0051 issued by ACHD, effective April 13, 2016, and is considered a major source of particulate matter (PM), particulate matter less than 10 microns in diameter (PM10), sulfur dioxide (SO2), carbon monoxide (CO), nitrogen oxides (NOX), volatile organic compounds (VOC), and Hazardous Air Pollutants (HAPs).

B. Inspection Opening Conference-

EPA Region III inspectors James Hagedorn and James Riggs arrived at 13th street and Braddock avenue at 9:02 AM on March 28, 2018 for an announced inspection. After signing in with the security guard, EPA inspectors met with Facility representatives. Once all parties were present, the opening conference began at 9:23 AM. Coleen Davis, the environmental manager for ET; John Michaud, the plant manager; Alaina Lantz, with USS Environmental Affairs; Mike Dzurinko, with USS Environmental Affairs; Chris Hardin, with USS Environmental Affairs; and Bill Rausch of the Allegheny County Health Department (ACHD) were present during the opening conference.

EPA inspectors presented their inspector credentials and explained that they would be conducting a Clean Air Act compliance inspection of the facility. EPA explained to ET its confidential business information (CBI) procedures, and notified them of their right to claim any material obtained during the inspection as CBI. EPA further explained that during the plant walkthrough photographs would be taken and shared with the facility in the final inspection report. The facility has claimed that all process photographs are considered **confidential** and

After being skimmed, the molten iron is charged into the BOP furnace on top of scrap steel and converted from molten iron and scrap to molten steel. To do this, an oxygen lance is lowered into the furnace and high purity oxygen is blown into the mix. This raises the overall temperature of the molten iron as well as decreases the carbon content of the steel by creating carbon monoxide and carbon dioxide. Additives are next added to the furnace to produce the correct grade of steel based on customer specifications. The BOP Shop has both primary and secondary emission control systems. The primary control systems include a water-cooled collection hood located above each vessel that draws the emissions to a venturi scrubber. The secondary emission collection system consists of sixteen collection hoods located at the roof level of the BOP Shop. Emissions are then drawn through a ten-compartment positive pressure baghouse.

From the BOP Shop furnace, the now molten steel is sent to either the vacuum degasser or the Ladle Metallurgy Furnace (LMF) depending on desired product specifications. The LMF uses two electrodes to arc a current within the mixture. This increases the temperature further and refines the metal. Emissions from this process are captured by a hood located above the LMF that draws the gasses to a six-compartment negative pressure baghouse.

III. Plant Tour/Walkthrough

The plant walkthrough began at 10:58 AM. Mr. Rausch obtained a ACHD van and drove the inspection team to the blast furnace entry area. The inspection team observed blast furnace No. 3 in operation, but did not witness a tapping event as the next one wasn't scheduled for another hour. Tapping usually lasts for two hours. ET uses a ring of small CO flares to control excess CO generated in the blast furnace. When asked about slag, Ms. Davis said that the slag is handled by a contractor, TMS, and eventually sold to be used in cement.

After leaving the blast furnace area, the inspection team drove to the BOP Shop. In the BOP Shop, inspectors watched as the molten iron was poured from the mixing vessel and into a ladle. The lance for the desulfurization process was observed being inserted into the ladle, but skimming was not observed as the inspection team proceeded to observe the BOP furnace.

ET personnel stated that approximately 400,000 pounds of scrap is loaded into the furnace per heat. Once the furnace was charged, the inspection team heard the oxygen lance begin to blow. Ms. Davis explained that an approximately 70-foot-long lance is lowered about three quarters of the way into the molten mix when blowing. The inspection team observed as ET personnel charged additives to the molten metal as well.

Next, the inspection team walked to the LMF furnace. Mr. Riggs detected a strange odor upon entering this area. No explanation could be provided by ET, but the smell soon faded. The inspection team observed the LMF electrodes arcing within the furnace. No emissions were observed. The LMF baghouse, located adjacent to the BOP shop was also observed. All rotary valves appeared to be functioning properly.

The final stop on the walkthrough was the continuous caster. The inspection team observed as steel slabs were rolled out, cut to size, and stacked on rail cars. The walkthrough ended at 1:33 PM.

request that EPA handle them as such. The photographs are included in this inspection report as Attachment 1.

Ms. Davis and Mr. Michaud explained that blast furnace No. 3 had been down for maintenance for the seven days preceding the inspection, but that it was operating normally at the time of the inspection. The only other blast furnace at the facility, blast furnace No.1, had been operating normally throughout those seven days however. ET takes occasional short stops of production for tap whole cleaning and longer stops every five weeks for continuous caster maintenance. These stops are usually for 16 hours.

Mr. Rausch stated that he had been at the facility for a period of two weeks shortly before the inspection date to oversee testing that ET had done on many of their particulate matter collection systems. These included the stoves, primary collection system, and the cast house baghouse. He indicated that the facility seemed to be doing well and that he didn't observe any issues during the testing.

Mr. Michaud expressed his anticipation for the recently announce tariffs on imported steel. He explained that ET is the lowest cost steel producer in the US Steel Portfolio and that they are very competitive in the US market. He also expressed optimism as the US Steel Granite City plant near St. Louis, MO recently restarted production.

Prior to the end of the opening conference, a hazardous gas awareness training was conducted to make inspectors aware of the potential for high concentration of certain gases in different parts of the facility. Four gas monitors were provided to the inspectors to be worn on their person at all times in these areas. After the training, the inspection team prepared to start the walk through. The opening conference ended at 10:54 AM.

II. Process Overview

The Facility uses two blast furnaces, Nos. 1 and 3, to produce iron. Iron ore and coke are added to the blast furnace in layers. As the iron melts, it sinks to the bottom of the blast furnace where it is tapped. The less dense slag is skimmed off the top, while the molten iron flows through a trough in the floor and into a submarine car. This is a refractory lined rail car designed specifically to transport molten iron. The submarine car takes the iron to the Basic Oxygen Process (BOP) Shop for conversion to steel. Emissions from the blast furnaces are captured by a collection hood above the tap hole combined with an air curtain that forces emissions into the hood. These emissions are then moved through a positive pressure four-compartment baghouse.

The plant has two BOP furnaces, F and G furnaces, for producing various grades of steel. The molten iron is dumped from the submarine cars into a hot metal mixer in the BOP shop and then transferred to a ladle. Emissions from the metal mixer are captured by hood that is located above the mixer. The emissions are then drawn from the hood and filtered through a twelve-compartment negative-pressure baghouse.

The desulfurization process takes place in the ladle. A lance is inserted into the molten iron and a magnesium-lime mixture is injected to produce a less dense sulfur compound that floats to the surface of the molten mixture where it is removed with a mechanical skimmer. It is important to remove sulfur from the molten iron as it can reduce the strength of the steel.

IV. Records Review

EPA did not review any records during this inspection.

V. Closing Conference

EPA inspectors thanked the representatives from ET for their time. Mr. Hagedorn expressed that he did not have any areas of concern from the day's activities, but that no compliance determination would be made at the time of the inspection. Mr. Hagedorn indicated that an inspection report would be generated from what was observed during the inspection and would be sent to the facility as well as to ACHD. Mr. Riggs reviewed the photographs taken during the inspection with ET. ET claimed all the photographs besides those of the LMF baghouse as CBI. The closing conference ended and inspectors left the facility around 1:00 PM.

VI. Areas of Concern

EPA did not note any areas of concern based on the observations from the March 28, 2018 inspection. However, EPA is still investigating observations and information related to previous inspections, including those involved with the Notice of Violation issued to USS Edgar Thomson on November 9, 2017.

VII. List of Attachments

Attachment 1. Photo Log

1) SO2 stack from boiler house being constructed
2) Excess CO flares on bottom of Blast Furnace No. 3
3) Blast furnace No. 3 air curtain
4) Tap hole and hood with mud gun on right – Blast Furnace No. 3
5) Ladle with molten iron in bop shop
6) Pouring molten iron from mixer into ladle with emission capture vents on either side
7) BOP tapping w/emissions – most captured by hood, the rest by secondary collection system at roof level
8) LMF electrodes prior to arcing
9) LMF emission capture ductwork
10) LMF Baghouse with rotary valves
11) Steel slabs just before being cut
12) Loaded steel slabs on rail car